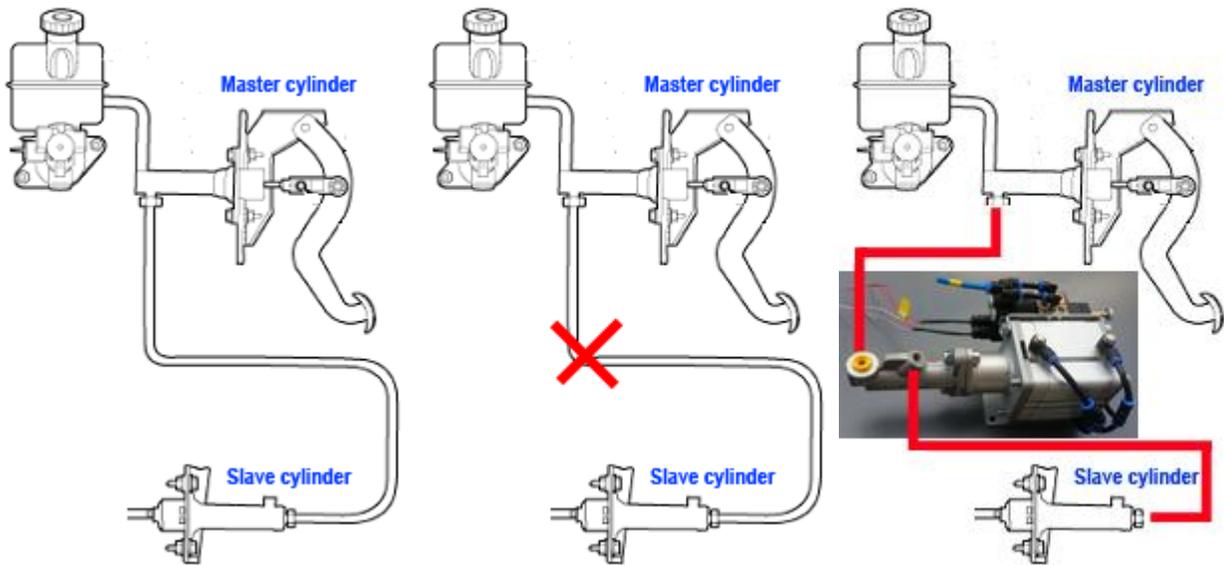


## Step 1 - Removing the existing clutch pipe and fitting new piping (supplied) with actuator



Original setup

Remove existing line

Add new pipes and connect them to the actuator. Use 3/8" UNF banjo bolt (also used as clutch switch) to bolt down the pipe from slave cylinder.

## Step 2 – Add fluid and bleed the clutch line

Bleed the clutch as you usually would. We recommend doing it by using this method:

<https://www.youtube.com/watch?v=YInIMuYzLRE>

Test the clutch by doing a test drive. Clutch should be fully bled, otherwise you will have problems on your next step and you will need to do it again.

## Step 3 – Adjusting just how far the automated actuator presses the clutch

Now that we have a fully working clutch system, we need to adjust how far will the actuator press the clutch. It's very important to adjust this correctly. If there's not enough travel, automated clutch will not work. If the travel is too long you can seriously damage the clutch.

You should have complete system wired and pc software installed.

Before you start, make sure that:

- you have wired complete system and you have pc software installed
- that under **CLUTCH** tab, you have "clutch **enabled**" and "clutch actuator time set to **250 ms**"
- gearbox in 1<sup>st</sup> gear and car not running.

*Please note: for changes to take effect, you need to send the settings to GCU (Settings -> Send to GCU)*

These steps will have to be repeated few times. We recommend doing this gradually.

### Step 3A – testing the actuator

Click **Clutch Actuator** button under **Tests** in top right corner. You should hear actuator activating for a brief time. At the same time you should try to move the car back and forth to see if the clutch has pushed far enough or not. You can try few times to make sure. If the clutch engages fully, go to [Step 3C](#).

*Please note: it's very unlikely that the supplied actuator will engage the clutch the first time, so if it doesn't, just move to [Step 3B](#).*

## Step 3B – setting actuator pressure

If clutch has pushed enough, you should gradually increase the pressure in the clutch line (separate regulator on the bottle). Please note that tightening the pressure screw increases the pressure.

Increase the pressure a little and go to [Step 3A](#).

## Step 3C – setting the actuator time

Now that you have set the actuator travel, we set just how much time must the actuator be pressed, to fully disengage the clutch.

Go to PC Software and under the **CLUTCH** tab set the **Clutch actuator time** to **40 ms**.

Click **Clutch Actuator** button under **Tests** in top right corner. You should hear actuator activating for a brief time. At the same time you should try to move the car back and forth to see if the clutch has pressed far enough or not. You can try few times to make sure. If the clutch doesn't disengage, increase the **Clutch Actuator time** by 10 ms and repeat. If the clutch disengages fully (you can move the car), then you can go to [Step D](#) (Almost done)

*Please note: for changes to take effect, you need to send the settings to GCU (Settings -> Send to GCU)*

## Step D – setting actuator release speed for upshift & downshift

Now it's time to set the downshift release speed. If the release is too fast, your car will jump hard on downshift, if the release is too slow, downshift will be very slow and you will not be able to add throttle soon enough. The idea here is to set the shift to be as smooth as possible. Make sure you try all gears, because this really depends on your gearbox.

We do this first by setting the flow valve on the clutch actuator. Clockwise direction will decrease the speed of clutch release and anticlockwise direction will increase the speed.

Set CLUTCH/Boost retract on up & downshift to 0 ms and test downshift while driving. Start with slower and gradually go to faster releases. Don't worry about how fast it shifts, just concentrate on how smooth the shift is. You also want to clutch to retract fully (if you close the flow too much you will actually prevent the clutch to retract fully). When you're happy with the smoothness you need to set the boost times (make sure you release the throttle on downshift and brake and just wait to downshift to end) without pressing the clutch.

CLUTCH/Boost retract on downshift in milliseconds tells the GCU just how much push will the controller add on downshift. We don't want to

be slow all the way, just at the end so we increase this duration gradually until we reach the point where shifting is kicking the car too much. We then go back to the duration we're happy with.

Next it's time to do the upshift setup. It's pretty much the same thing, except here we really want to test this while flooring the throttle as this is where most of the kicking will occur.

It's normal that retract on upshift is longer than downshift.

Also please note, that if you change the mechanical flow valve on the clutch actuator, you need to re-tune the boost durations.